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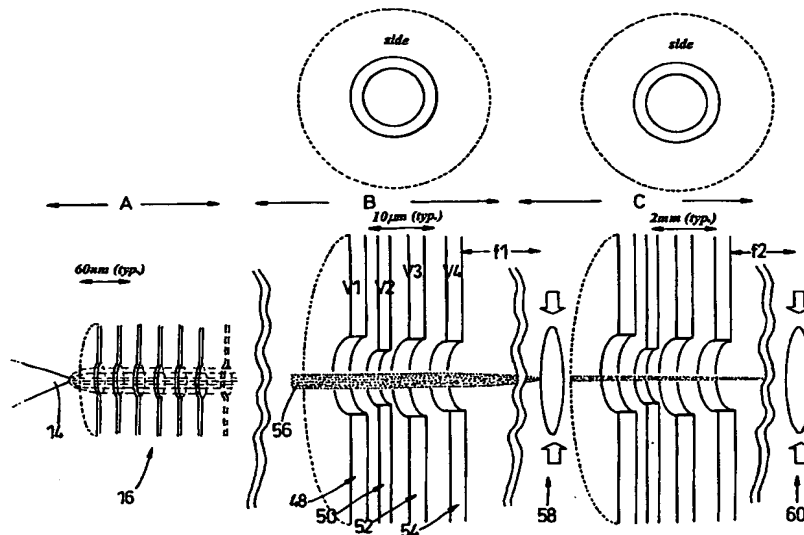
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(54) Title: CHARGED PARTICLE BEAM GENERATOR



(57) Abstract: The source of electrons is a nanotip in a vacuum as used in near field microscopy. The source of ions is a similar nanotip in vacuum supplied with liquid metal (gallium) as in a liquid-metal ion source. Electrons or ions from this nanometre-sized tip are extracted by centralising the tip over an aperture plate and applying a suitable voltage to the tip. The electrons (ions) pass through this plate and are accelerated up to several keV using a nanoscale/microscale accelerating column before being focussed using further microscale (or nanoscale) cylindrical lenses. The final element is an aberration corrected miniature (or sub-miniature) einzel lens which can focus the beam at several millimetres from the end of the instrument.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01J37/26 H01J37/317

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 023 060 A (KIM HO-SEOB ET AL) 8 February 2000 (2000-02-08) abstract column 1, line 57-62 column 2, line 18-24 figure 3	1,16,17
A	US 6 369 385 B1 (KIM HO-SEOB ET AL) 9 April 2002 (2002-04-09) abstract column 7, line 26-39 figures 5,8 --- -/--	1-17

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>"FABRICATION OF VERTICALLY ALIGNED APERTURES FOR E-BEAM MICROCOLUMN APPLICATION"</p> <p>IBM TECHNICAL DISCLOSURE BULLETIN, IBM CORP. NEW YORK, US, vol. 37, no. 12, 1 December 1994 (1994-12-01), pages 583-584, XP000487902</p> <p>ISSN: 0018-8689</p> <p>page 583 -page 584</p>	1-17
A	<p>CHANG T H P ET AL: "A SCANNING TUNNELING MICROSCOPE BASED MICROCOLUMN SYSTEM"</p> <p>JAPANESE JOURNAL OF APPLIED PHYSICS, PUBLICATION OFFICE JAPANESE JOURNAL OF APPLIED PHYSICS. TOKYO, JP, vol. 31, no. 12B, PART 1, 1 December 1992 (1992-12-01), pages 4232-4240, XP000415428</p> <p>ISSN: 0021-4922</p> <p>abstract</p> <p>paragraph 'INTRO!</p> <p>table III</p> <p>figure 10</p>	1-17

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INTERNATIONAL SEARCH REPORT

Initiation on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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			WO 0067290 A2	09-11-2000

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